



MERIDIAN

Engineering

Manual

GETTING STARTED

Section A

ADDITIONAL INFORMATION

Section B

**For Use with Systems Fitted
Issue 2.1 or Later Software**

MERIDIAN

GETTING STARTED - Section A

Index

How to use this Manual!	1
Wiring	
- General	2
- Mains	3
- Keypad	4
- Sounders	5
- iD	6
Power - up	8
Programming	9-10
Communications	15
Menus	
- Zones	11
- Outputs	15
- Site Options	16
- Summary	20
Intelligent Arming	18
False Alarm Management	17
Section B	21

Dear Engineer

We know you hate reading complex manuals so we've done the following things:

We've made Meridian really easy to install

We've split the manual into 2 sections. Section A for a quick start, with cross reference to Section B for more detailed information

Our lads in Tech Support will be delighted to help with any problems

Example

Refer B63

DEFAULT
CODES

USER 1234
MANAGER 2222
ENGINEER 1111

Wiring Instructions

Before you start, remember these basic rules:

1. As with all other professional Data Communication Systems Don't run more than one data pair in any cable (ie Don't mix ID, Keypad, Telecom, Speakers etc in the same cable sheath)

2. Ohm's Law applies in Alarm Systems too! Long cable runs will lose voltage along the way depending on the load at the other end, so double up on supply pairs, Bell/Speaker drives and even **iD** bus if necessary.

3. But never double up the TX/RX on RS-485 keypad cables!

Refer B22


$$V = IR$$

The End Station

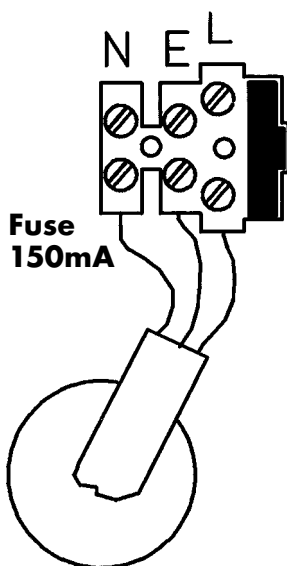
The panel lid **MUST**
be correctly
earthed for safety
reasons

Refer B49

Mount the End Station using 3 fixing screws.

Wire the mains to the mains connector block through the mains inlet access hole.

CAUTION: Mains electricity is dangerous, installation should be by a competent electrician.



DON'T loop the mains wire in the box, or enter through a different hole, it may affect Meridian's EMC performance!

The keypad

Code each keypad
to a different
address before
power up

Address
Ø = All closed
1 = A1 open
2 = A2 open
3 = A1/2 open

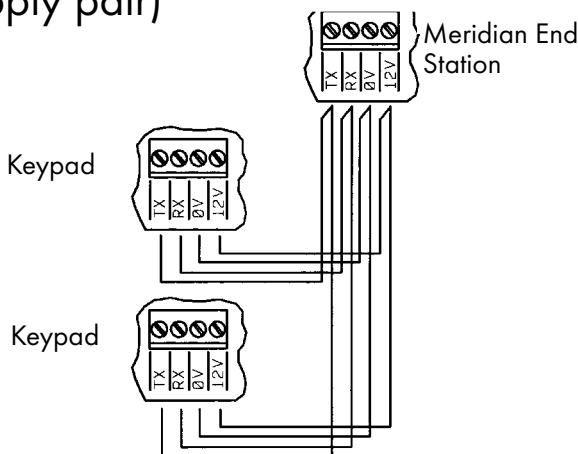
Plug Engineer
keypad (Address 3)
onto the End Station
PCB as required.

***Note:**
keypad No. 3
cannot be used
alone

Mount the keypad so that the LCD is about 10cm below eye level. Open the keypad, remove the securing screw and fix the mounting plate to the wall. Remove any protective film from the display

Tag performance could be affected if the keypad is mounted on or near a metal surface.

Using 6 core cable connect the keypad to the End Station (use the two spare cores to double up the supply pair)



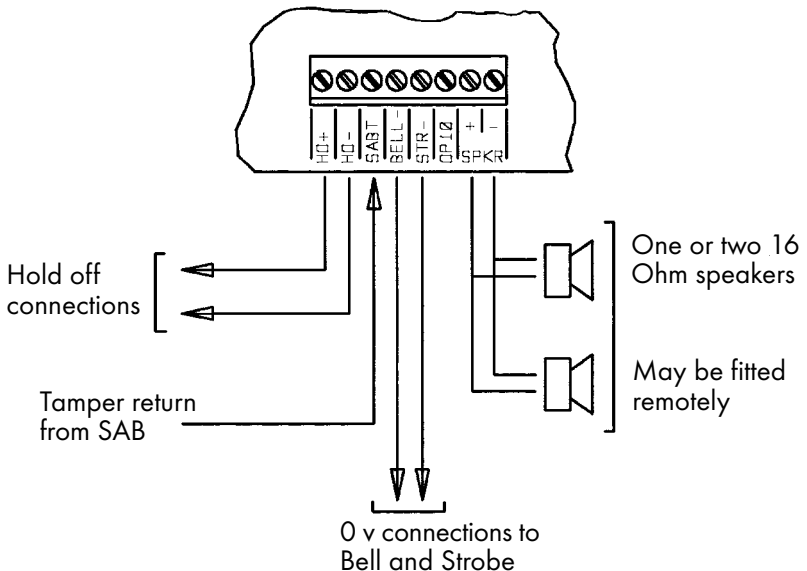
Up to 4 keypads may be used.

Outside Sounders

Mount the outside sounder and connect the 6 core cable into the end station as shown.

Internal speakers

Mount the internal sounders and connect them as follows:
Up to two 16 OHM speakers may be wired in parallel.



Meridian has a
1.5 Amp
maximum
capacity in
alarm -

**PLEASE don't
overload!**

iD wiring

Mount all your PIR and other detectors and connect them to the **iD** bus as follows:

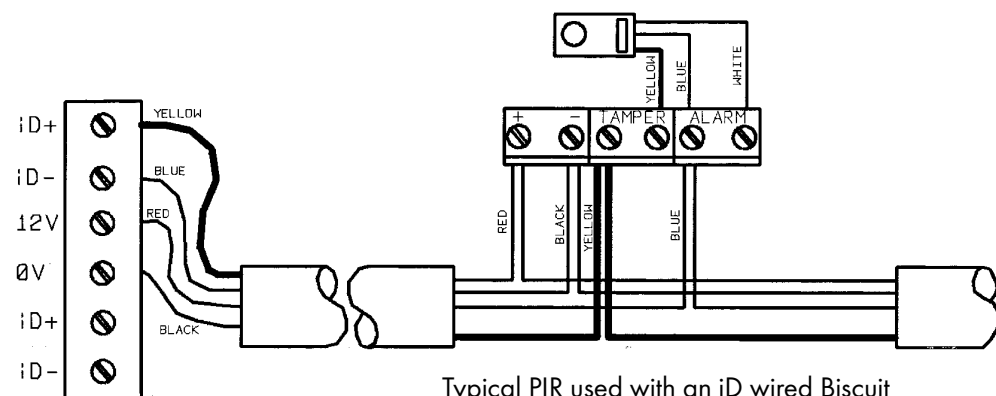
iD wiring can be any form of parallel - 'T', 'Star' or 'Ring'.

Make sure you always wire colour to colour.

ONLY use '**iD** Biscuits' with address 1-20

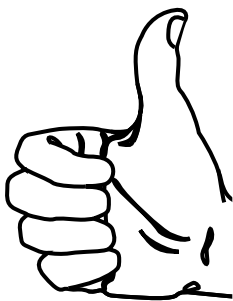
DON'T use two biscuits with identical addresses

Refer B 23



Typical PIR used with an iD wired Biscuit

Please, don't
run an iD cable
more than 100
metres from
Meridian

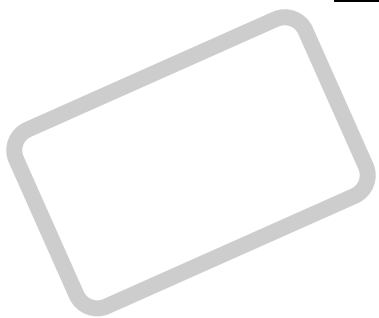


Refer B 25/26

That's it! You've wired up Meridian as simply as that.

If you've done it correctly Meridian will work first time.

If not, see page B25 for possible faults.



Powering up Meridian

Double check wiring is correct and no wire - whiskers are shorting together.

Secure the panel tamper switch otherwise a Tamper Alarm will occur at Power Up.

Power Up with Mains and/or Battery.

Silence any alarm using the user code 1234.

Default codes:

USER	1234	(code 1)
MANAGER	2222	(code 15)
ENGINEER	1111	(code 16)

Loop the elastic band provided over the PCB to secure the Tamper switch

For security, change ALL these default codes

The NVM chip MUST be fitted for Meridian to work correctly

Programming Meridian

Most of the program choices are self-evident.

Refer to Section B for further details.

The main menus are in **CAPITALS**.

Sub menus are **lower case**.

Moving through the Menus

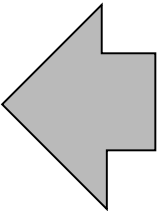


The **NO** key escapes from menus and move you to the next menu.

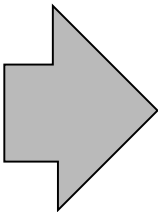


"OK"

The **YES** key lets you enter menus and accepts data entries.



The **'B'** key steps BACKWARD through ALL menus.



The **'D'** key steps FORWARD through ALL menus and changes YES/NO choices.

The next pages list the menu choices for you.

Menus Summary

SET SYSTEM?

CLEAN START?

CHANGE ZONES?

- Types /Attributes/Text

CHANGE TIMERS

- Bell/Delay/Strobe

- Exit/Entry/Re-arm

SET DATE AND TIME?

EXIT MODES?

- All/B Set/D Set

SOUNDER VOLUMES?

- Chime/Exit/Entry

- Silent/Part Set

ALARM RESPONSE?

ALL/B Set/ D Set/Fire Set

CHANGE CODES?

CHOOSE OUTPUTS?

SITE OPTIONS?

- Engineer Reset

- Intelligent Set

- Edit Area Test

REVIEW LOGS?

CLEAR LOGS?

WALK TEST?

EXIT ENGINEER?

Fire and PA
circuits continue
to work in
engineer mode . . .

. . . except in
change zones
menu and
diagnostics
display menus

Main Menus

SET SYSTEM

Meridian will ignore all detectors while setting - once set, the first active detector trips the alarm.

CLEAN START: Key in 2000 to return the programme to factory defaults.

CHANGE ZONES

Zone Types

- 00 - Fire
- 01 - PA
- 02 - Silent PA
- 03 - Tamper
- 04 - Intruder
- 05 - Entry/Exit
- 06 - Walk Through
- 07 - EE/Walk Through
- 08 - Exit Terminator
- 09 - Isolated
- 10 - Keyswitch sets A
- 11 - Keyswitch sets B
- 12 - Keyswitch sets D
- 13 - Shunt

Engineers you
MUST try this !!

Key in one of these
numbers to select
the zone type
required

or

Step through the
list with the
'D' and 'B' keys

Refer B 27

Change zones continued

Zone Attributes

Active in B

Active in D

Intelligent arming (see page 18)

Anti -Mask

Soak Test

Chime

Omittable

Pulse keyswitch

Refer B 31

CHANGE your
choice with the
'D' key

Accept your
choice with the
'YES' key

How to Edit Text

Use the 'B' and 'D' keys to move the cursor back and forth.

Delete a letter with the 'C' key.

Numeric keys step through the alphabet.

Key 1 gives ABCD

Key 2 gives EFGH etc.

Refer B 33

Main Menus

Key in the appropriate numbers to provide the response you require in the following menus:

CHANGE TIMERS?

EXIT MODES?

- 00 - Timed
- 01 - Terminator (Push to set)
- 02 - Final Door
- 03 - Quick Set

SOUNDER VOLUMES?

- 01 - Bleepers
- 02 - Adjustable
- 03 - Full alarm

ALARM RESPONSES?

- 01 - Keypad
- 02 - Sounder
- 03 - Sounder and bells (local)
- 04 - Full alarm
- 05 - Graduated Sound
- 06 - Graduated Local
- 07 - Graduated Full

Key in one of these numbers to make your choice

or

Step through the list with the 'D' and 'B' keys
Accept your choice with the YES key

Refer B 34

Refer B 35

Refer B 36

Digi-Comm or STU can be plugged on to Molex Pins or stand alone via an interface

Each output may be programmed to the 9 digi/STU PINS, output 10 on the Meridian PCB, and the 6 remote iD outputs

Key in the output number you wish to use.

Then pick the type from this list

Refer B 38

OUTPUT TYPES

	Default output
00 Isolated	
01 Fire	[1]
02 PA	[2]
03 Intruder	[3]
04 Set: All	[4]
05 Abort	[5]
06 Confirmed	[6]
07 Tamper	[7]
08 Reset Digi	[8]
09 Low volts	[9]
10 Mains Fail	
11 B Set	
12 D Set	
13 B Alarm	
14 D Alarm	
15 Shunt	
16 Shunt Fault	
17 Latch 1	
18 Latch 2	
19 Viper Reset	[10]
20 Ready to Set	
21 Unable to Set	
22 Bell	
23 Line Fault	
24 Batt Fail	
25 Tell Back	
26 Lights	
27 Trouble (Day Tamper/Eng)	

Main Menus

The system
will NOT
accept codes
ending in '00'

SETTING D
STOREROOM

Don't leave the
Manager Code
as 2222 - it's a
security risk

Press 'C' to
delete a code
or Tag

The system automatically
exits from 'Change Code'
menu on expiry of a timer
linked to the programmed
Exit time. If this is very
short, difficulties may be
experienced when
programming codes.

SITE OPTIONS

Engineer reset

When waiting engineer Reset, a 4 digit anticode will be displayed which may be used to generate a 'reset' code by the Castle remote reset Code software

Intelligent Set (See page 18).

Edit Area Text

Customise the 'B' and 'D' LCD setting messages.
(See how to Edit Text page 13).

CHANGE CODES (Tags)

Meridian has a 16 PIN Code capability.

User 15 is the Manager.

User 16 is the Engineer.

To Programme, see User Guide.

Duplicate PIN Codes will not be accepted.

REVIEW LOGS

Choose User or Engineer Logs with the 'A' key.

Open circuit alarms are indicated by 'O', Tamperers by 'T'.

False alarm management

Meridian has a sophisticated false alarm management system to help the user quickly realise and correct any mistakes made.

- 1.** An Abort signal will be sent whenever Meridian is switched off following an Intruder Alarm.
- 2.** Confirmed signals will be stored and not sent for 3 minutes if any Alarm occurs within 3 minutes of Set, or for 3 minutes following deviation off the Entry Route or Entry Time out.
- 3.** Delay Bells are cancelled for 3 minutes after Set, and following an Entry Alarm.

Abort is available as restore 'Intruder' (code 3) or as a separate signal

Confirm will signal when the second valid zone is tripped including Tamperers

Following a Re-Arm, confirmation is available when 2nd valid zone is tripped

Intelligent Arming

Refer B 42

In simple terms intelligent arming allows Meridian to intelligently determine whether the user is leaving the house - and therefore requires full set, or is going to bed - and needs part set.

To permit this simple 'function' all you need to do is:

Position a PIR detector that detects the user at (say) the top of the stairs in the vicinity of the bedroom.

This detector must have the 'Intelligent' Zone attribute as 'YES'.

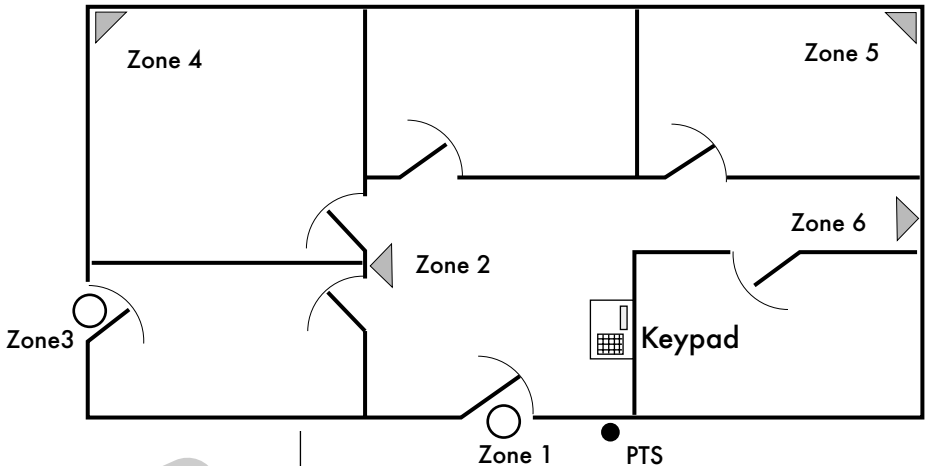
The detector acting as the final exit zone (eg. front door), which is active in Part Set 'B', should have the 'Intelligent' zone attribute as 'YES'.

It makes life so much easier for the user!!
One code/Tag does it all - no complex part Set routines

Refer B 42

In this example of a bungalow Zone 6 is the detector that is isolated at night and would have 'Intelligent' Zone attribute as **YES**.

Zone No.1 would have 'Intelligent' Zone attribute as **YES**.



When Meridian is switched on, it assumes you wish to Set All ('A') of the system. When Meridian detects you in zone 6 it realises you wish to set part ('B') of the system - and does so. (If you go back to the front door Meridian will realise that you have changed your mind and set full ('A') again!).

**We hope you enjoyed
installing Meridian**

If you have any ideas or grouses,
call us on

01344 886446

or

for Technical Assistance

call

But please be gentle with us, it
may have been a hard day!

MERiDIAN

Index to Section B

Additional Information

DEFAULT SETTINGS	21
WIRING NOTES	
System Wiring	22
iD Wiring	23
iD Commissioning Readings	24
IF IT DOESN'T WORK ...	25
Faultfinding an iD System	26
ZONE TYPES	27
Shunt Zones	28
Keyswitch Zones	29
ZONE ATTRIBUTES	31
Anti-Masking	32
TEXT PROGRAMMING	33
EXIT MODES	34
SOUNDER VOLUMES	35
ALARM RESPONSES	36
INPUTS	37
OUTPUTS	
Specifications	38
Types	39
REMOTE SIGNALLING	41
INTELLIGENT SETTING	42
TESTS & DIAGNOSTICS	44
PRINTING	45
SYSTEM SPECIFICATIONS	46
Printed Circuit Boards	47
CE MARKING DIRECTIVE	49

DEFAULT SETTINGS FOR PROGRAMMABLE OPTIONS

Zone types	All zones are isolated	
Zone attributes	All attributes are OFF	
Zone text	All texts default to "Zone "	
Timers	Bell duration	15 minutes
	Bell delay	0
	Strobe duration	0
	Exit time	40 seconds
	Entry time	45 seconds
	Re-arm count	3 times
Exit modes	ALL set	Terminator
	B set	Timed
	D Set	Timed
Sounder Volumes	Chime	Full volume
	Exit	Adjustable
	Entry	Adjustable
	Silent Part Set	ON
Alarm Responses	ALL set	Full alarm
	B set	Sounder and bells
	D set	Sounder and bells
	Fire	Sounder and bells
Outputs	1	Fire (01)
	2	PA (02)
	3	Intruder (03)
	4	Set All (04)
	5	Abort (05)
	6	Confirmation (06)
	7	Tamper (07)
	8	Reset Digicom (08)
	9	Low Volts (09)
	10	Viper Reset (10)
	11-16	Isolated (00)
Site Options	Engineer Reset	OFF
	Intelligent Setting	ON
Codes	1 (User)	1234
	2 - 14	NOT programmed
	15 (Manager	2222
	16 (Engineer)	1111

SYSTEM WIRING

The system keypad communications use RS.485 protocol, which is designed to be used with cabling installed to the following specification

Cable type:	Twisted Pairs (Min 4 cores)	eg CQR 'Twisted Pair cable'
Wiring configuration	Parallel, in 'Daisy-Chain' configuration	ie Spurs and Star configurations are not recommended.
Terminations	680 ohm resistor wired between TX and RX terminals of the equipment at each end of the RS.485 link	
Wiring Distance	Maximum overall length of RS.485 link should not exceed 1 Km	

NOTES: For keypads in excess of 10 metres from End Station, 6- or 8- core cable is recommended, with additional cores being used to double (or treble) supply connections for minimum voltage drop.

Keypads in excess of 100 metres from End Station should be separately powered.

Systems using relatively short cable distances, in electrically 'quiet' environments may successfully use simpler wiring configurations, and use standard alarm cable.

The iD system used for detection should be wired as follows

Up to 100 metres per cable run	4 cores Additional cores are recommended to double up supply to minimise voltage drop	Screened cable preferred. Standard alarm cable may be used in clean environment. Do NOT use highly capacitive cable, such as 'PYRO' etc.
--------------------------------	--	--

NOTES

Do NOT run any of the above connections in the same cable as, or close to, each other or other AC signals, such as telephone, loudspeaker, etc. cables unless screened cable is used.

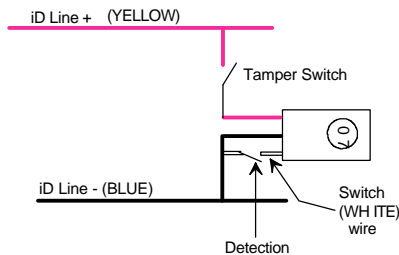
Screened cable should be terminated with the screen connected to earth (metalwork) at one end only, as close as possible to the point of entry into the housing

Under no circumstances should system cabling be run with MAINS cable, as this contravenes BS.4737 and the Electrical Wiring regulations.

On completion of wiring, measure the AC voltage between 12v supply terminals and mains earth. If this exceeds 1 volt, connect End Station 'Gd' terminal to mains earth to introduce AC Noise filtering.

iD WIRING

Each detector must be wired to an iD biscuit, and wired back to the panel in any parallel configuration. Each biscuit has an address number. Devices numbered between 01 and 20 may be used, but under no circumstances should any number be duplicated. The detector is wired as follows:



It should be noted that the biscuit may also be operated magnetically, in which case the WHITE wire is not connected. For this reason, care should be taken if siting a biscuit close to a loudspeaker, or other strong magnetic field.

CABLE SPECIFICATIONS:

Cable type:	Screened
Wiring format:	Any parallel configuration
Cable length:	Max 100 metres for any cable run
Cable routing:	Must NOT be run with other cables carrying AC or digital signals
Biscuit location:	Must be wired directly to detector terminals If this is impossible, a 'DP' junction box should be used.
Checks:	All commissioning checks must be performed and recorded
Warning:	In some situations, especially take-over sites using existing wiring, iD technology may not be suitable.

To simplify connections, junction boxes are available as follows:

iD 'T'	For simple cable extension, or 'T' junctions
iD 'DP'	Accepts a wired biscuit and provides a double pole circuit for the connection of a detector(s). There is no practical limit to the wiring length of this circuit.
NEW VERSION	

NOTE: Original DP junction box, accepting plug-in biscuits, did NOT provide a true 'tamper' loop, being designed for self-protecting zones (eg 24Hr tamper zones, PA zones, etc.).

When allocating biscuit numbers, ensure that any 'Walk Through' zones are allocated to biscuit numbers adjacent to, and higher than, the 'Entry Exit' zone to which they refer.

It will be found beneficial to keep a record of the biscuits used, and the order in which they are wired (on the various spurs) to assist with fault finding (see p.26)

iD Commissioning Readings

The following procedure is recommended to provide the measurements expected, to comply with BS.4737.

1. Before finally securing the detector housings, remove the Yellow and Blue (iD+ and iD-) wires from the End Station (p.26 Fig 1 points A and B), and twist them together.
2. At the end of the first wiring leg (point C), measure and record
 - (a) The resistance between the Yellow and Blue (L+ and L-) connections
ENSURE that this reading is correct for the cable length involved.
 - (b) The supply voltage at the detector (if applicable)
3. Secure the detector housing, ensuring that the tamper switch is correctly closed.
4. Repeat steps 2(b) and 3 for each appropriate detector on that wiring leg.
5. Move to each of the other wiring legs (point D, E), and repeat steps 2 to 4
6. Separate the Yellow and Blue wires at the End Station, measure and record the resistance between them.
7. Check for leakage between iD cable and mains earth, also to 12v supply
8. Replace these wires in the appropriate terminals.
9. Measure and record the system voltage at the End Station, Keypads and SAB unit.
10. Measure and record the standby and alarm currents, by inserting the meter (set to current rang in series in the battery '+' lead, and disconnecting the mains supply).

The following readings should be anticipated:

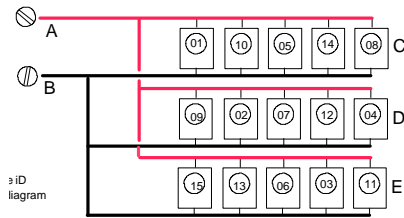
Step 2(a)		Wiring resistance only (max 10 ohms per 100m)			
Step 6		Resistance of iD network, as follows:			
No of biscuits	Approx. resistance	No of biscuits	Approx. resistance	No of biscuits	Approx. resistance
1	87K	8	10.9K	15	5.8K
2	43.5K	9	9.7K	16	5.4K
3	29K	10	8.7K	17	5.1K
4	21.8K	11	7.9K	18	4.8K
5	17.4K	12	7.3K	19	4.6K
6	14.7K	13	6.7K	20	4.4K
7	12.5K	14	6.2K		
Step 7		Open circuit resistance measurement to earth, no voltage to supply connections.			

NOTE: These measurements are useful for verifying system integrity. They should NOT be considered as diagnostic measurements for individual biscuits, due to the fact that these are semi-conductor devices, and exhibit a wide range of resistance values.

IF IT DOESN'T WORK

PROBLEM	POSSIBLE CAUSE
System will not initialise correctly	No NVM fitted
	Incorrect voltage at End Station, or at Keypad
	Wiring fault on RS.485 between End Station and Keypad(s)
	Keypads not address coded correctly
Response to detectors incorrect	Are zone types and attributes correctly programmed?
Systems sets in Part instead of Full (or vice versa)	Intelligent Setting not correctly programmed, or programmed when not required (see p.42)
Communicator / STU not signalling correctly	Trigger outputs not programmed correctly (see p.41) or communicator programmed for incorrect channels or polarity
No power to detectors	'ID' Fuse blown
SAB Tamper fault	'Bell / Strobe' fuse blown
	SAB Tamper return missing or incorrect polarity (requires 0v return)
No bell delay following alarm	Bell delay is cancelled for 3 minutes following system set, or entry
No confirmation following alarm	Confirmation not valid within 3 minutes of set or entry.
Speakers not sounding during exit time	Speakers interrupted during 'zone omission' routine
	For first 10 seconds of exit time, sound is present on keypad bleepers ONLY.
Speakers not sounding at all	'Speaker' fuse blown
Bells (and communication) delayed after alarm	Alarm response set to 'Graduated'
Faults on iD Circuitry	See page 26

FAULTFINDING AN iD SYSTEM



False Alarms. If these are not reported as tampers, normal checks on the detector and siting should be performed.

Tamper alarm caused whenever a detector is triggered is almost certainly the result of the iD biscuit being wired with the detection (switch) connection in the YELLOW wire instead of between WHITE and BLUE.

Random multiple tamper alarms (including twin devices) can be caused by having a switch contact wired between WHITE and YELLOW. It can also be caused by the system voltage being dragged low by current overload, eg in alarm.

If the entire iD system is showing tamper faults, or 'iD Line Fault' the line may be overloaded (too many biscuits attached), or there is a cable short, or leakage to supply or to earth.

Other tamper alarms can be caused by

- a) a tamper switch open, or broken cable or connection
- b) two biscuit reporting at the same address
- c) a faulty biscuit

BEFORE looking for the fault, check the system diagnostics to ascertain the full picture of biscuits showing tamper faults. For example, referring to diagram above, suppose that a tamper alarm has been generated by zone 2:

If zone 2 alone is in fault, and the diagnostics show 'F' (Open Circuit), the problem will be a tamper switch open, poor connection or faulty biscuit at zone 2.

If zones 4, 7 and 12 also show a tamper fault, the problem is a break in the cable between 2 and 9, or a poor connection at either the zone 2 or zone 9 detector.

If zone 13 (say) is also showing a tamper fault, the problem is likely to be that one of them is reporting as 'twin device' - check the diagnostics, the biscuit showing 'F' (missing) will either be the wrong number, or faulty.

Thus checking for the overall picture, and having available a sketch of the order of wiring of the biscuits, will greatly simplify fault finding.

ZONE TYPES

Each zone (iD point) on the system may be programmed to any of the available zone types, by entering the relevant selection code:

Code	Zone type	Notes	
0 0	Fire		
0 1	PA	<i>To prevent spurious retriggering, PA zones remain inactive after engineer reset until system set and unset.</i>	
0 2	Silent PA	This function is also available from the keypad using the '4' and '6' keys (see User manual)	
0 3	Tamper		
0 4	Intruder		
0 5	Entry Exit		
0 6	Walk Through		These zone types should be allocated to biscuit numbers adjacent to and higher than the 'Entry Exit' zone
0 7	Walk Through / EE	In 'ALL' set, functions as 'Walk Through' zone, in Part set, functions as 'Entry Exit' zone	
0 8	Exit terminator	For 'Push to Set' button or equivalent. See p.34	Normally OPEN push button
0 9	ISOLATED		
1 0	Keyswitch sets A	When one of these zones is OPENED, the system will set. CLOSING the zone will unset the system - see p.30	
1 1	Keyswitch sets B		
1 2	Keyswitch sets D		
1 3	Shunt	Whilst this zone is CLOSED, all zones programmed into its 'shunt list' will be shunted out of operation. See p.28 Only ONE shunt zone may be selected per system.	

For additional information on zone types, refer to 'Shunt Zones' 'Keyswitch Zones' and 'Exit Modes' pages, also to 'Zone Attributes'

SHUNT ZONES

The shunt facility may be used to control a zone, or group of zones, whilst the system is set, as follows:

PROGRAMMING:

1. Wire the zones to be used in the normal way. The zone to be used as the shunt control should be numbered lower than the shunted zones, and be wired so the switch (lock) contacts are CLOSED when the shunt is to be applied (ie when the shunted zones are to be INACTIVE).
2. Program the zones to be shunted in the normal way. The system will permit shunting of zones programmed as 'Entry Exit, Walk Through, Intruder, or Tamper.
3. Program the zone to be used to control the shunt as zone type 13 (shunt) *after* programming the other zones. The display will show
Shunt Li st?

Press 'YES' to select, and the display will show

Shunt zones = _ _
None

Key in the number of the first zone to be added to the shunt list, followed by 'YES.'

The programmed zone text will appear on the second line, in place of 'none' - and the display will await the addition of further zones. The display will cycle through all zones added to the list. Re-entering the number of a zone already included will result in it being deleted from the list.

A final 'YES' will terminate the selection, and permit any appropriate zone attributes to be programmed.
To clear the shunt list completely, press the 'C' key.

4. The system is now ready for use.
5. ONE shunt only may be used per MERIDIAN system, but there is no limit to the number of zones which may be shunted.

NOTE: If reallocating a 'Shunt' zone to a different type, it is essential that the 'shunt' is cleared (ie all zones are live) BEFORE entering engineer mode to perform the change.

Operation of Shunt Zones

In operation, whenever the 'shunt' zone is CLOSED, the zones programmed onto the 'shunt list' will be inactive. On opening the zone, the zones will be reactivated after a 10 second 'setting' period. In the event of a shunted zone remaining in fault condition, the shunt will remain in force until it clears.

Outputs may also be programmed to function in conjunction with the 'shunt' operation as follows:

Output type:

- | | |
|----------------|---|
| 15 Shunt | May be used to drive an indication live throughout the time that the shunt is applied (ie zones are inactive) |
| 16 Shunt fault | May be used to drive an indication (or buzzer) to draw attention to the fact that the shunt is being released. This will be live for approx. 10 seconds, unless a fault exists on a shunted zone, in which case the output will pulse, and will remain live until the fault is cleared. |

Refer pages 38 - 39 for specifications of outputs used.

KEYSWITCH ZONES

1. Wire the keyswitch between the BLUE and WHITE connections of the iD biscuit.
The contacts should present an OPEN circuit to the biscuit when the system is to be set, and CLOSED to unset.
2. Program the biscuit to be a 'keyswitch' zone.
Note that alternative programs are available for setting 'All' 'B' or 'D' - the function keys are NOT available when using a keyswitch.
3. If required, set the 'Pulse Keyswitch' attribute as ON.
If this is done, the system will set on the first OPENING of the keyswitch, and Unset on the second OPENING - with the switch having been closed in between - as for example when using a sprung keyswitch.
4. The keyswitch and Keypad may be used interchangeably, EXCEPT that the keyswitch cannot be used to unset from a mode different from that for which it is programmed (see 6)
5. The 'Omittable' attribute should be set as 'NO' to prevent the keyswitch from being accidentally omitted when setting from the keypad - unless this feature is required.
6. In the case of a keyswitch programmed as 'A' with zone attributes 'Active in B' and 'Active in D' set as ON, it WILL be possible to unset with the keyswitch if the system is partially set.

ZONE ATTRIBUTES

The operation of each zone may be adapted to individual requirements by selecting *attributes* from the following

Attribute	If 'NO' selected (default)	If 'YES' selected
Active in B	Zone is automatically omitted if system is partially set (B or D as appropriate)	Zone is LIVE when the system is partially set (B or D as appropriate)
Active in D		
Omittable	Zone CANNOT be manually omitted whilst setting. (Does NOT affect automatic omission in Part set)	Zone can be manually omitted.
Chime	-	Zone will cause system to 'chime' if in 'Chime' mode (ie 'C' set).
Soak Test	Zone will function normally	Zone will NOT trigger an alarm, but will indicate and log.
Intelligent	System will set conventionally	System setting will be modified according to triggering of 'Intelligent Set' zones. See p.42
Pulse Keyswitch	Keyswitch zone will set system on OPENING circuit, and unset on CLOSING	Keyswitch zone will set system on first OPENING of circuit, and unset on NEXT OPENING, after closing in between. See p.30
Anti-Mask	-	Anti-Mask monitoring will be implemented, and indicate on setting the system. See p.32

ANTI-MASKING

Any zones programmed with the 'Anti-Mask' attribute will be monitored whilst the system is unset.

If the zone has NOT been activated since the system was last unset, then, on attempting to set the system, the display will show

Zone xx
may be masked

If more than one zone is affected, these will scroll repeatedly.

Diverting from the exit route to test these detectors will automatically clear them from the display, ***and abort the setting procedure.***

Press 'NO' to abort the setting procedure and test the detectors in question.

Press 'YES' to override the warning and set the system.

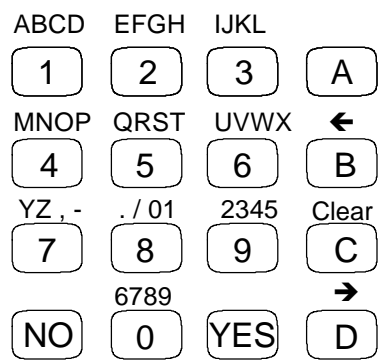
If this is done, the system 'User Log' will show an entry

Mask overri de

This will be located immediately AFTER the appropriate 'set' entry (ie earlier in time' when the log is viewed.

TEXT PROGRAMMING

When programming text, the keys on the keypad are used as follows



NOTES:

NO key		Accepts the text string as programmed, and returns to zone selection menu
YES key		
'B' Key		Moves cursor one position to the RIGHT
'C' Key		Clears any character from the cursor position, and moves one position to the right, thus inserting a space.
'D' key		Moves cursor one position to the RIGHT

EXIT MODES**EXIT TERMINATOR / PUSH TO SET**

1. Wire the terminator device (eg push button) between the BLUE and WHITE connections of the iD biscuit. The connection should be CLOSED momentarily to activate.
2. Program the biscuit as an 'Exit terminator' zone (type 08), ensuring that the 'Omittable' attribute is set to 'NO'
3. The system will set when the exit terminator is **closed** during exit time.
4. If the 'Push to Set' function is required to function when 'Part' setting, the 'Active in B' and 'Active in D' attributes should also be set as 'ON'

FINAL DOOR SET (Valid for 'ALL' set only)

1. For use with a contacted lock, to set the system when the lock contacts are closed, and start entry time when they are opened. In this application, a separate door contact should be provided, programmed as 'Walk Through' for maximum security.
2. Alternatively, a single contact on the door may be programmed as 'Entry Exit' in the normal way. The system will set when the door is opened and re-closed.

QUICK SET (Valid for Part Set 'B' and 'D' only)

1. The system will set after an abbreviated (5 second) exit time.

NOTE: For the first 10 seconds of exit time, (except when setting 'ALL' with a keyswitch), only the keypad beepers will sound - thus enabling the intelligent setting system to detect the change to 'Silent Part Set' if programmed, before the system sounders become live.

SOUNDER VOLUMES

The load on the loudspeaker terminals at the End Station should NOT fall BELOW 8 OHMS (ie two 16 ohm speakers in parallel) or the system will be overloaded and malfunction or damage may result.

For alarm signals, the system will automatically produce maximum volume level from the loudspeaker(s). Other signals may be adjusted by using the 'Sounder Volumes' menu.

Level 01	Bleepers	Signals programmed to this level will sound keypad beepers ONLY	
Level 02	Adjustable	Signals programmed to this level will sound the system loudspeaker(s) at reduced volume - in addition to the keypad beepers	Adjusted by control on End Station pcb (see p.47). Adjustment applies to ALL signals programmed to this level.
Level 03	Maximum	Signals programmed to this level will sound at full volume	All alarm signals, including tamper, are fixed at this level.
Silent Part Set		If selected as 'YES' exit time on Part Setting 'B' or 'D' will be silent.	

NOTE: For the first 10 seconds of exit time, (except when setting 'ALL' with a keyswitch), only the keypad beepers will sound - thus enabling the intelligent setting system to detect the change to 'Silent Part Set' if programmed, before the system sounders become live.

ALARM RESPONSES

The system response to an alarm condition may be selected individually for each level of set ('ALL' 'Part B' and 'Part D'), and for FIRE alarms whilst the system is other than 'ALL' set (when system is 'ALL' set, Fire response will be the same as the remainder of the system).

Selection	Option	Notes
0 1	Keypad	Keypad beepers ONLY will sound
0 2	Sounder	Keypad beepers, and system loudspeaker(s) will sound
0 3	Local	Keypad beepers, system loudspeaker(s) and external bell will sound
0 4	Full	The communicator output will be live, in addition to all the above sounding.
0 5	Graduate Sounder	Keypad beepers will sound for 15 seconds, then be joined by the loudspeaker(s).
0 6	Graduate Local	As option 05, with the external bell activated after a further 15 seconds.
0 7	Graduate Full	If PART SET As option 06, with communicator output live after a further 15 seconds (ie delay from alarm to triggering of communicator is 45 seconds).
		IF FULL SET If alarm created by an entry fault (expiry of entry time, or deviation from entry) system will respond as in PART SET. If normal intruder alarm created, system will respond as option 04 (ie immediate full output).

GRADUATED responses apply to initial setting only - in the event of a further alarm being generated after the system has 're-armed' the responses will be immediate.

INPUTS

Input facilities on MERIDIAN are available as follows

Push to Set (exit terminator)	Suitably programmed zone input. See p.27 and 34	Exit terminator
Keyswitch A	Suitably programmed zone inputs. See p.27 and 30	Keyswitch A
Keyswitch B		Keyswitch B
Keyswitch D		Keyswitch D
Communicator Fail	Pin 7 on Communicator connector. Signal from communicator to register inability to communicate with Alarm Receiving Centre	If live during an alarm condition, will override any programmed bell delay.
Line Fault	Pin 15 on Communicator connector. Signal from communicator to register telecom line fault. System response harmonises with NACOSS directive NAD.1	
Tellback	Pin 6 on communicator connector. Response dependant upon panel status	
	If system in ALARM condition, functions as 'TELLBACK' to log that digital communicator successfully signalled to Alarm Receiving Centre.	
	If system Unset, and waiting Engineer Reset, functions as 'RED CARE RESET' to permit STU to signal Engineer Reset to system	

NOTE: Communicator inputs are designed to accept signals which are 0v, switching to +5v when active.

Telecom Line Fault Response with System unset:

The internal sounders will be live. This may be cancelled by entering the 4-digit pin code. The display will show 'Telecom Fault' until the fault clears. If the fault recurs before the system is again set, the indication will return, but the sounders will NOT retrigger.

OUTPUTS - SPECIFICATIONS

The MERIDIAN system has a total of 19 outputs available, as follows

BELL	Terminal at End Station	Normally +12v (via 1K), switching to 0v when live . Max current 400mA
STROBE	Terminal at End Station	Normally +12v (via 1K), switching to 0v when live . Max current 400mA
SPEAKER	Terminals at End Station	Normally +12v, -ive terminal switched when live. Max load must NOT fall below 8 ohms (typ. 2 x 16 ohm speakers)
Outputs 1 to 9	Digicom plug-on pins (see p.41 and 47)	Normally 0v, switching to +5v when active. No current available (logic level only)
Output 10	Terminal at End Station	Normally 0v, switching to +12v when active . Max current 65 mA when at +12v
		NOTE: when programmed as Viper Reset, output is +12v except during reset pulse (see p.39)
Outputs 11 to 16	At add-on iD output modules (2)	Normally +12v (via 1K), switching to 0v when active . Max. current 400mA when 0v

Of these, Outputs numbers 1 to 16 are fully programmable, to any of the output types shown on page 39. More than one output may be programmed to each type, as required.

Each output module has 3 outputs, which are selectable by jumpers on the module to be outputs 11, 12 and 13 or 14, 15 and 16 (see page 48)

OUTPUT TYPES

Selection	Type	Default to o/p	Active	Restore
0 0	Isolated	11 to 16	-	-
0 1	Fire	1	At alarm	When silenced
0 2	PA	2	At alarm	When reset
0 3	Intruder	3	At alarm	At first code entry after alarm
0 4	Set All	4	When system 'ALL' set	When unset
0 5	Abort (Mis-operation)	5	When system silenced after 'intruder' alarm	At next code entry
0 6	Confirmation	6	When further zone triggered after 'intruder' alarm	At next code entry
			Applicable to Tamper, Intruder or Walk Through zones only.	
0 7	Tamper	7	Any tamper alarm	At reset
0 8	Reset Digicom	8	At power up	Live for 5 seconds
			Must ALWAYS be allocated to output 8 when digital communicator is in use (NOT required for STU)	
0 9	Low Volts	9	At fault	When fault clears
1 0	Mains Fail	-	At fault	When fault clears
			Also included in output type 27	
1 1	B Set	-	When Part set B	When unset
1 2	D Set	-	When Part set D	When unset
1 3	B Alarm	-	When intruder alarm whilst Part set B	On code entry
1 4	D Alarm	-	When intruder alarm whilst Part set D	On code entry
1 5	Shunt	-	When the shunt zone is closed (shunt applied)	When shunt zone opened

1 6	Shunt fault	-	When shunt zone opened (shunt released)	After 10 seconds, or when zone faults clear.
			If a shunted zone is in fault during this period, the output will pulse until cleared, or shunt reapplied.	
1 7	Latch 1	-	When set (and in Walk Test)	On alarm, or when unset.
1 8	Latch 2	-	This is the inverse of type 17	
1 9	Viper Reset	10	At output 10: Permanently +12v, dipping to 0v for 5 seconds at switch on	
			If used other than at output 10, an external relay must be used to switch +12v supply.	
2 0	Ready to set	-	At switch on	When set
2 1	Unable to set	-	If zone in fault during exit time	When zone clears
2 2	Bell	-	When bell output live	When bell output silenced
2 3	Telecom fault	-	When telecom line fault signalled by communicator	When fault clears
2 4	Batt Fail	-	When battery fault detected	When fault clears
			Battery test is performed every 30 seconds	
			Also included in output type 27	
2 5	Tellback	-	When triggered by communicator	When code entered
2 6	Lights	-	Live during Exit AND Entry times	
2 7	Trouble	-	Engineer access, OR System fault	When clears

REMOTE SIGNALLING

The communicator output connections on MERiDIAN are compatible with any industry-standard plug-on digital communicator or STU. Whilst these outputs may be reprogrammed to any desired configuration (see p.39), the default settings correspond with standard communicator configurations, so that in many cases no programming will be required.

The output pins are numbered, top to bottom, 1 to 8 on the left hand connector, and 9 to 16 at the right (see page 47).

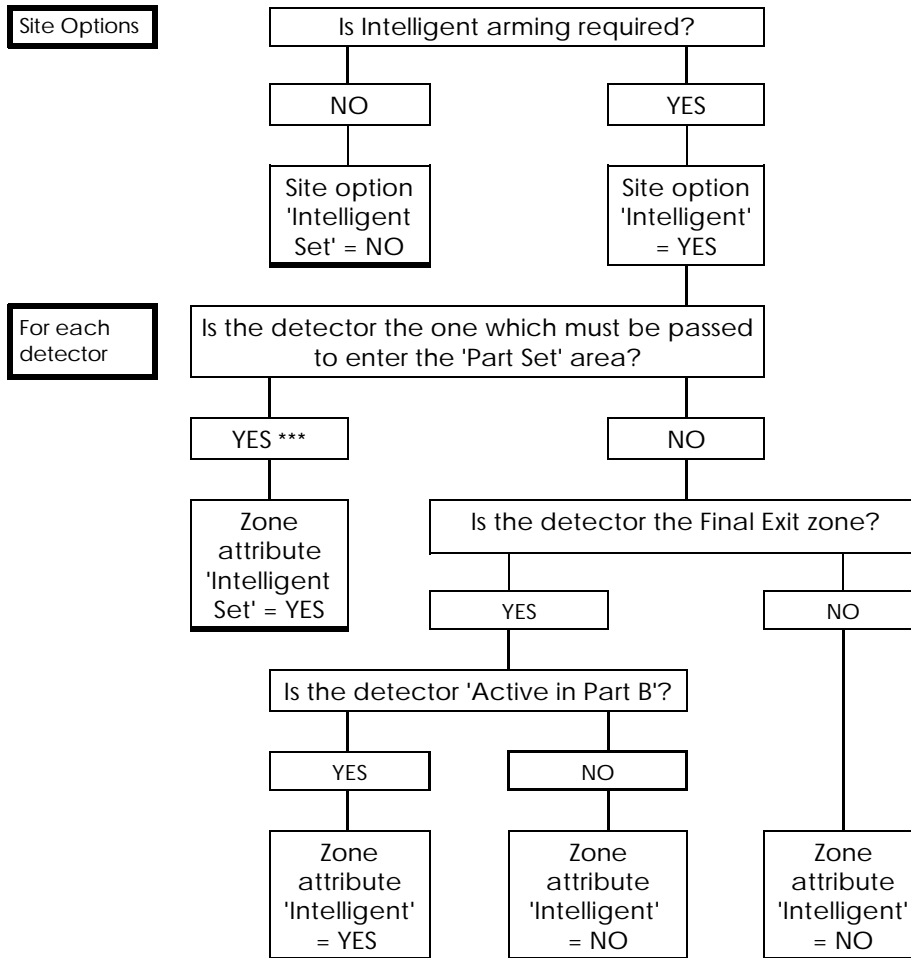
PCB Pin No	Prog o/p No	Digi channel	STU channel	Default setting
1	1	1	1	Fire 0 1
2	2	2	2	PA 0 2
3	3	3	3	Intruder 0 3
4	4	4	4	Open / Close 0 4
5	5	5	5 or 7	Abort (Mis-Operation) 0 5
6	-	Input	Input	Tellback / Red Care INPUT Reset
7	-	Input	Not used	C. Fail INPUT
8	9	L.Bat	L. Bat	Low Volts 0 9
9	-	-	-	+12v supply
10	-	-	-	0v supply
11	-	Not used	Not Used	-
12	-	-	-	+5v supply
13	6	6	Not Used	Confirmation 0 6
14	7	7	6	Tamper 0 7
15	-	Input	Input	Line Fault INPUT
16	8	Reset (8)	8	Digicom Reset 0 8

NOTES: All communicator outputs are +5v when active, and inputs require +5v to trigger.

A 2000R interface may be used to provide a relay interface for PakNet, or to trigger a stand-alone communicator. Alternatively, outputs from 'iD Output Modules' may be used to trigger a stand-alone communicator, *remembering that these outputs will be 0v applied triggers.*

INTELLIGENT SETTING**PROGRAMMING.**

The following chart will prompt the correct choices when programming 'Site Options' and 'Zone attributes.'

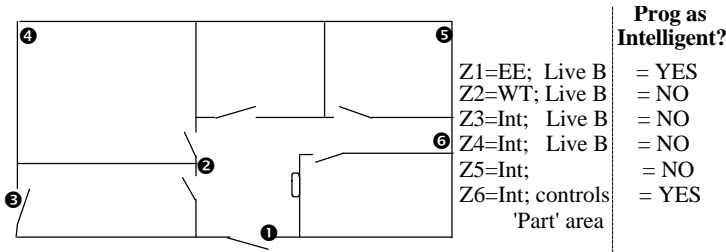


*** - Do NOT use a Door Contact in this location

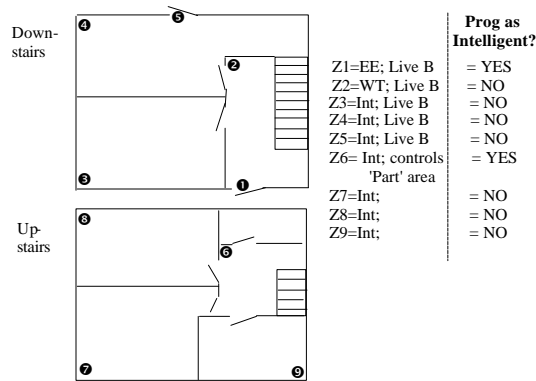
See page 43 for examples of implementing this.

Examples of programming for Intelligent Set

1. A bungalow:



2. A House:



TESTS and DIAGNOSTICS

The following facilities are available within the Engineering menu

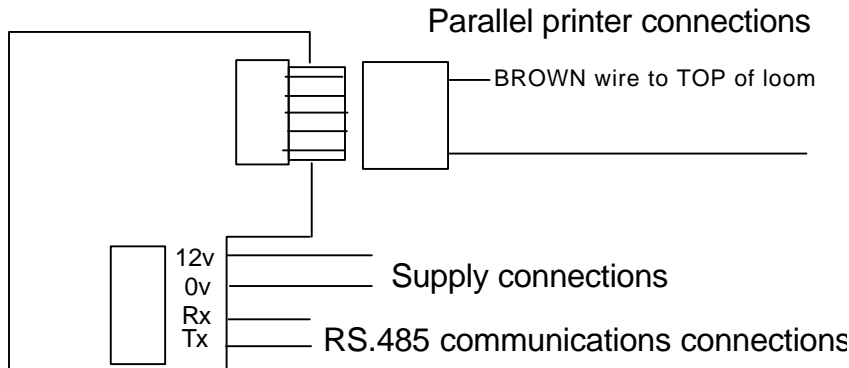
Output Test	Press 'YES' to test outputs as follows	Press keys 1 to 9 to activate individually the outputs on the communicator connectors
		Press 'A' key to activate ALL other outputs
		Press '0' key to cancel outputs.
	Display shows system voltage and current. With all outputs OFF, this indicates system quiescent current. With 'All' outputs ON, system alarm current is shown (except for communicator, if fitted)	
Display Zones	Press 'YES' to display current status of ALL iD biscuits	Display indicates: c = Detector correct (normal) state O = Detector in active state F = Wiring open circuit (tamper) T = Twin device (tamper)
		NOTE: For Exit terminator zones, the 'normal' state (c) is OPEN, and active state (O) is CLOSED
Bell Test	Press 'YES' to activate bell test	Display shows system voltage and current
	Press 'D' to change to	Strobe test
	Press 'D' to change to	Sounder test
	In each case the display shows the system voltage and current whilst the test is in progress.	
	Press 'NO' to terminate tests	

NOTE: At each step, check that the current displayed is equivalent to that expected, and there are no severe voltage drops.

PRINTING FROM MERIDIAN

To print from MERIDIAN, connect the printer interface (CT.3070) to the RS.485 (Keypad) connections. This may be done as a permanent connection, or a temporary one, via the 'Engineer Keypad' plug on the End Station. This interface provides a connector for a PC compatible Centronics parallel printer, such as the Epson P40, Seiko DPU40 or Datac DP1014.0400K printers.

Ensure that the correct connecting loom (CT.5400 or CT.5500) is used, and plugged on with the correct polarity.



When viewing logs, pressing the 'C' key will direct the entries to the printer, as well as scrolling through the display.

NOTE:

Owing to the wide variety of software driving requirements for different printers, it is NOT possible for all types to be used with MERIDIAN.

Castle Care-Tech Ltd. regret that we are not able to offer detailed advice for specific printers, other than those supplied by us.

20 point iD detection zone alarm control system, all zones fully programmable.

Accepts high security tags as an alternative to codes

Full ('All') and two Part ('B' and 'D') Setting options

Programmed parameters and logs stored in 2416 NVM

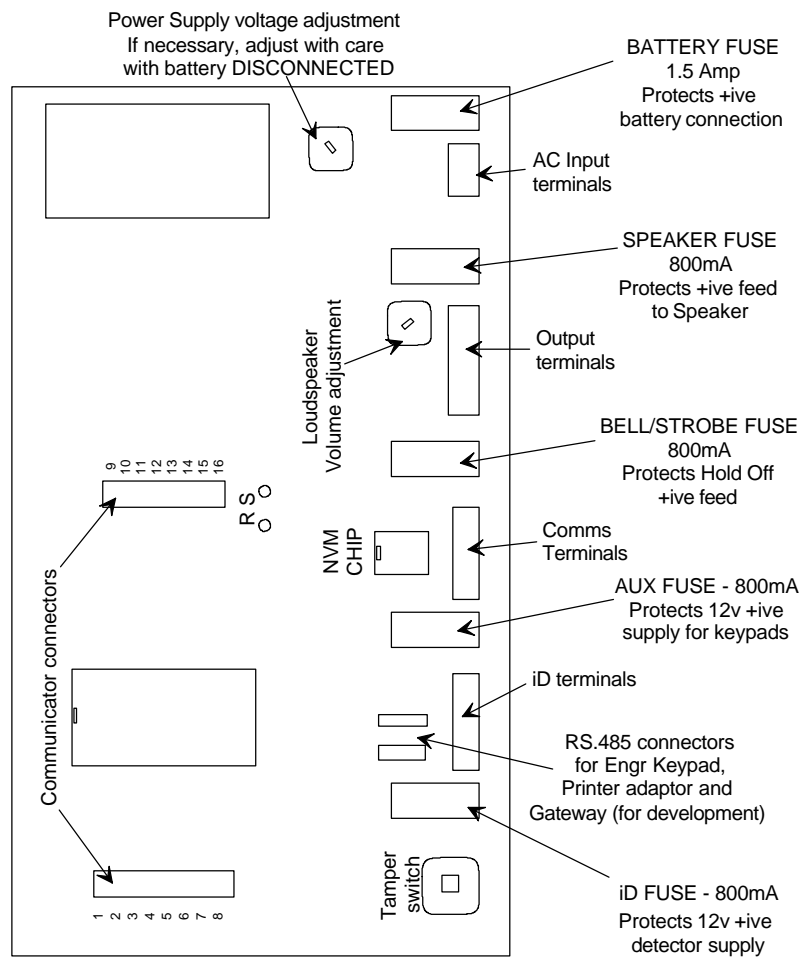
226 event 'User log' plus 30 event 'Engineer log'

The MERiDIAN system is approved for connection to a public telecommunications system, via an approved communicating device.
Quote approval number NC/G/J/100003

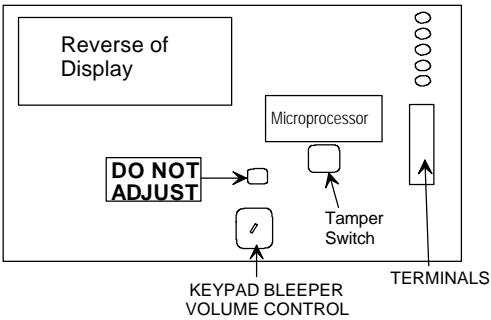
January 2000

PRINTED CIRCUIT BOARDS

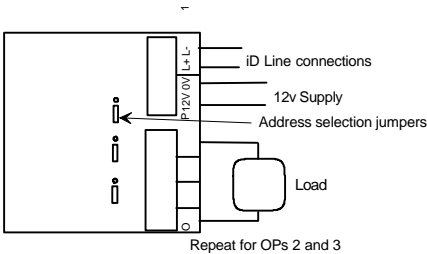
1. The End Station



2. The Keypad



3. The iD Output Module



THE CE MARKING DIRECTIVE



This product complies with the requirements of the EMC Directive (89/336/EC) and the Low Voltage Directive (73/23/EC and 93/68/EC).

Electromagnetic Compatibility

An alarm installation built around this product will be considered compliant with the EMC Directive, PROVIDED THAT all other equipment used carries the 'CE' mark, NAD that the installation follows the guidelines specified in this manual.

This does NOT guarantee that no compatibility problems will be experienced, especially with older equipment, not designed to the same standards. Additionally, exceptional environment scan produce unpredictable results. Should problems be experienced, the other equipment should also be checked. Re-siting of the alarm control, or other equipment, may be the only solution to the problem.

Further information concerning EMC is available in the BSIA publication *"EMC Guidelines for Installers of Security Systems."*

Mains Installation

Mains Installation must be performed by a qualified electrician, in accordance with Electrical Wiring Regulations (BS.7671) - connecting to the terminals provided with the correct polarity.

A good earth is vital for the current functioning, and EMC performance of this system.

INSTRUCT-47

Issue 3b

© Castle Care-Tech Ltd.

January 2000